

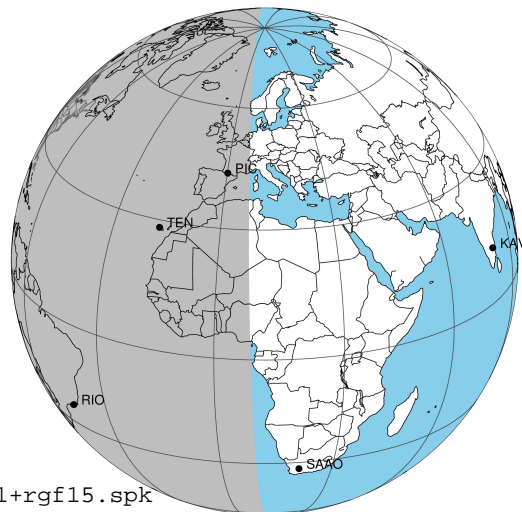
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2048-09-18T05:20:16.630
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3424399453990711040
 2Mass ID (if available) : 05550093+2254546

Jupiter 2048-09-18T05:20:16 K8.78 G13.59 Pgt

ICRS Star Coord at Epoch: 05h 55m 00.92913s +22:54:54.68238s

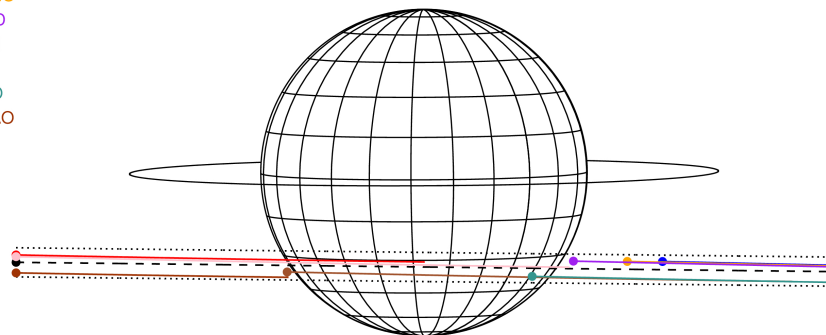
RUWE (>1.4 is poor) : 1.09
 K magnitude : 8.776
 G magnitude : 13.595
 RP magnitude : 12.387
 BP magnitude : 15.191
 DUPflag : 0
 Distance (au) : 5.038
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 14.35
 Sun-Target sep (deg) : 86.45
 Sun-Moon sep (deg) : 144.47
 B (ring opening deg) : 2.59
 PA of pole (deg) : 0.30
 Pole direction: RA (deg): 268.05734
 Dec (deg): 64.49722
 C/A sky separation (") : 11.327
 C/A sky separation (km) : 41387.8
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2048-09-18T05:20:16 K8.78 G13.59
 Pgt



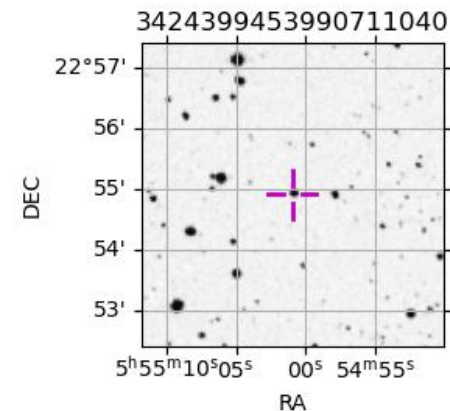
2048-09-18T05:20:16.6300 α: 05 55 00.9291 δ: +22 54 54.682 C/A ***** PA 359.35 deg v_sky +14.35 km/s D 05.04 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PAL
 KPNO
 MCD
 TEN
 RIO
 ESO
 SAAO



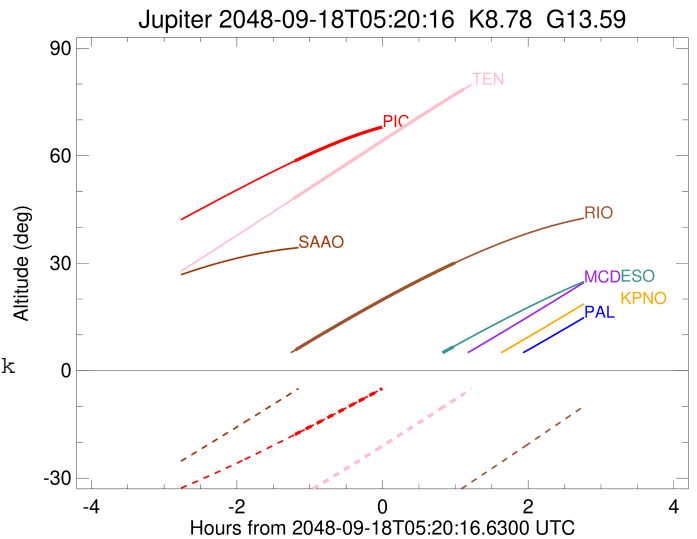
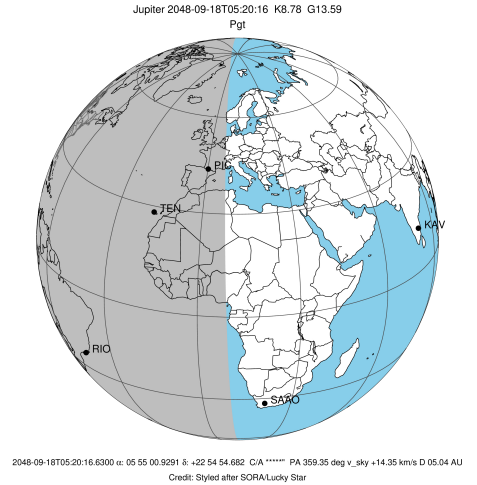
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	SEP 18 04:08 - SEP 18 04:08	Pin
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5	+ +	SEP 18 04:06 - SEP 18 06:27	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	SEP 18 04:08 - SEP 18 06:20	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	SEP 18 06:18 - SEP 18 06:18	Pne
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-09-18T05:19:05.600
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PIC
Location           : Pic du Midi
Latitude (deg)     : 42.93656
E. Longitude (deg) : 0.14231
Altitude (km)     : 2.890
Gaia source ID     : 3424399453990711040
2Mass ID (if available) : 05550093+2254546
ICRS Star Coord at Epoch: 05h 55m 00.92913s +22:54:54.68238s
RUWE (>1.4 is poor) : 1.09
K magnitude        : 8.776
G magnitude        : 13.595
RP magnitude       : 12.387
BP magnitude       : 15.191
DUPflag           : 0
Distance (au)     : 5.038
f0 (km)           : 0.00
g0 (km)           : 0.00
skyplane vel. (km/s) : 14.35
Sun-Target sep (deg) : 86.45
Sun-Moon sep (deg) : 145.13
B (ring opening deg) : 2.59
PA of pole (deg)   : 0.30
Pole direction: RA (deg): 268.05734
Dec (deg): 64.49722
C/A sky separation (") : 10.723
C/A sky separation (km) : 39183.0
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

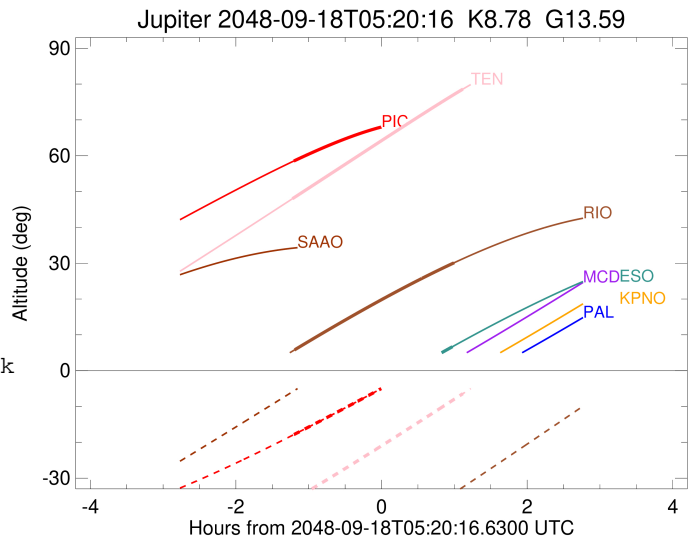
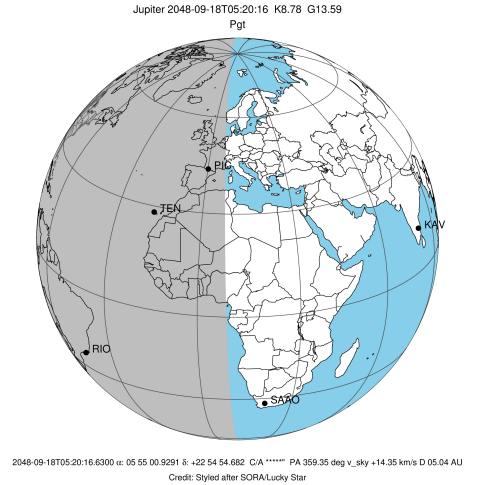


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-18T04:08:04.552	58.52	-17.84	71489.4	-32.05	-35.52
Jupiter	E	2048-09-18T06:30:20.952	69.54	7.86x	71489.1	-34.19	-37.75

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-09-18T05:16:51.410
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : TEN
Location             : Teide Obs./Tenerife
Latitude (deg)       : 28.30050
E. Longitude (deg)   : 343.48909
Altitude (km)        : 2.395
Gaia source ID       : 3424399453990711040
2Mass ID (if available) : 05550093+2254546
ICRS Star Coord at Epoch: 05h 55m 00.92913s +22:54:54.68238s
RUWE (>1.4 is poor) : 1.09
K magnitude          : 8.776
G magnitude          : 13.595
RP magnitude         : 12.387
BP magnitude         : 15.191
DUPflag             : 0
Distance (au)        : 5.038
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 14.35
Sun-Target sep (deg) : 86.45
Sun-Moon sep (deg)   : 145.32
B (ring opening deg) : 2.59
PA of pole (deg)     : 0.30
Pole direction: RA (deg): 268.05734
Dec (deg): 64.49722
C/A sky separation (") : 11.089
C/A sky separation (km) : 40518.9
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

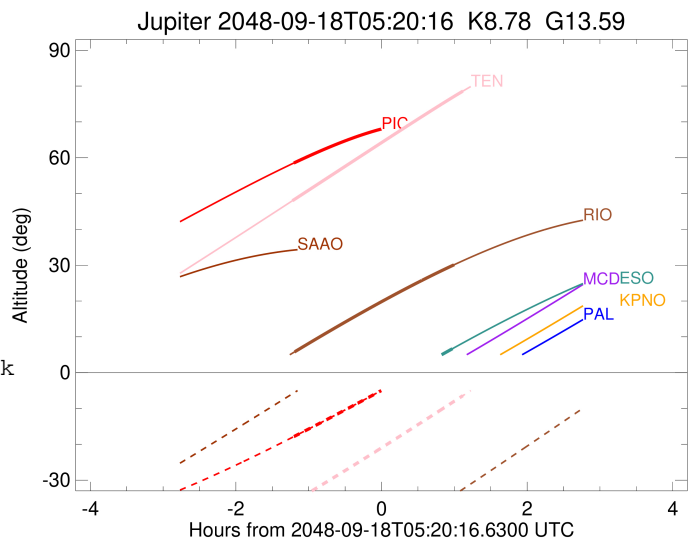
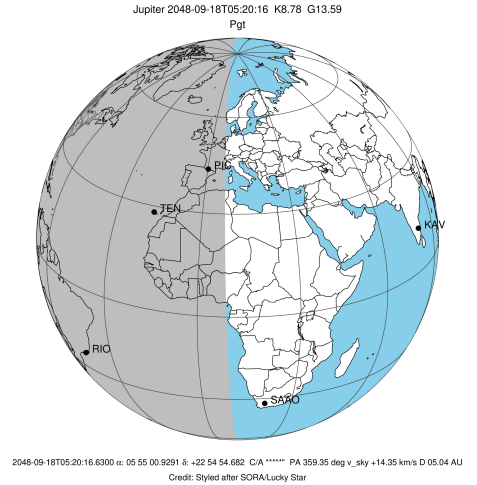


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-18T04:06:52.923	47.99	-36.21	71489.3	-33.13	-36.65
Jupiter	E	2048-09-18T06:27:16.078	78.57	-6.43	71488.9	-35.67	-39.29

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-09-18T05:14:02.930
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : RIO
Location            : Rio de Janeiro
Latitude (deg)      : -22.89506
E. Longitude (deg)  : 316.77708
Altitude (km)       : 0.033
Gaia source ID      : 3424399453990711040
2Mass ID (if available) : 05550093+2254546
ICRS Star Coord at Epoch: 05h 55m 00.92913s +22:54:54.68238s
RUWE (>1.4 is poor) : 1.09
K magnitude          : 8.776
G magnitude          : 13.595
RP magnitude         : 12.387
BP magnitude         : 15.191
DUPflag             : 0
Distance (au)        : 5.038
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 14.35
Sun-Target sep (deg) : 86.45
Sun-Moon sep (deg)   : 145.23
B (ring opening deg) : 2.59
PA of pole (deg)     : 0.30
Pole direction: RA (deg): 268.05734
Dec (deg): 64.49722
C/A sky separation (") : 12.287
C/A sky separation (km) : 44898.8
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

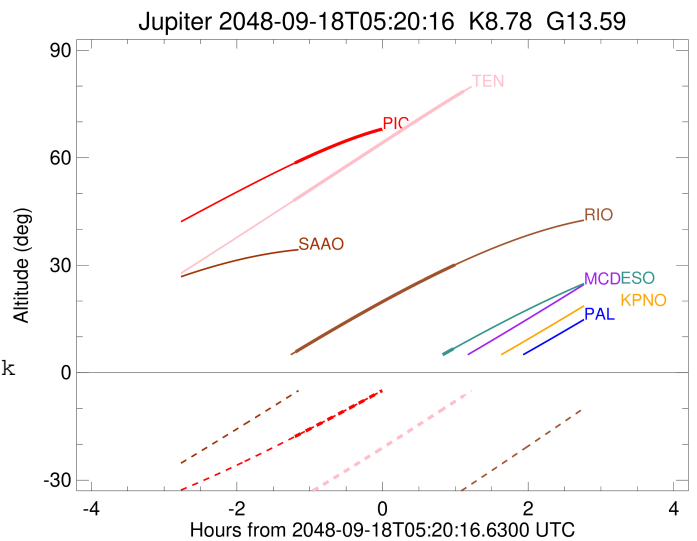
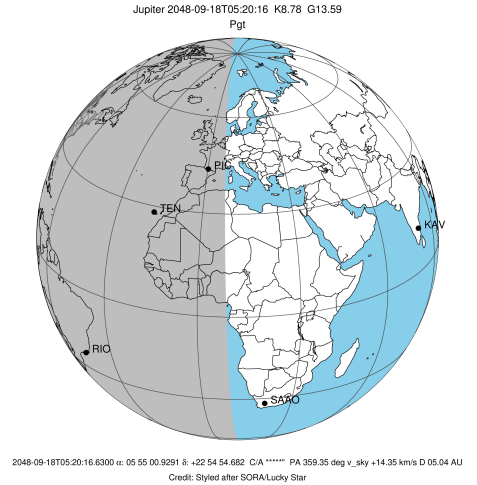


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-18T04:08:38.131	5.80	-60.99	71488.7	-37.30	-40.96
Jupiter	E	2048-09-18T06:20:03.540	30.11	-34.14	71488.2	-40.32	-44.03

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2048-09-18T05:13:15.120
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : ESO
Location              : European Southern Obs. (3.6m)
Latitude (deg)        : -29.26097
E. Longitude (deg)    : 289.26831
Altitude (km)         : 2.400
Gaia source ID        : 3424399453990711040
2Mass ID (if available) : 05550093+2254546
ICRS Star Coord at Epoch: 05h 55m 00.92913s +22:54:54.68238s
RUWE (>1.4 is poor) : 1.09
K magnitude           : 8.776
G magnitude           : 13.595
RP magnitude          : 12.387
BP magnitude          : 15.191
DUPflag              : 0
Distance (au)         : 5.038
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 14.35
Sun-Target sep (deg) : 86.45
Sun-Moon sep (deg)   : 145.09
B (ring opening deg) : 2.59
PA of pole (deg)     : 0.30
Pole direction: RA (deg): 268.05734
Dec (deg): 64.49722
C/A sky separation ("): 12.161
C/A sky separation (km): 44435.4
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```



x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-18T04:08:21.400	-19.50x	-61.69	71488.7	-36.80	-40.46
Jupiter	E	2048-09-18T06:18:47.243	6.70	-53.30	71488.2	-39.95	-43.66